

WHAT IS CLAIMED IS:

1. A method of implementing optical channel access in a network comprising a plurality of distributed nodes and a master node, the method comprising:

requesting the optical channel access via radio-frequency (RF) messaging from one or more of the plurality of distributed nodes to the master node; and

granting, from the master node, the optical channel access to at least one of the plurality of distributed nodes based on the RF messaging.
2. The method of claim 1, wherein the optical channel comprises a free-space channel.
3. The method of claim 1, wherein the optical channel comprises an optical fiber channel.
4. The method of claim 1, wherein the plurality of distributed nodes comprise mobile nodes.
5. The method of claim 1, wherein the network comprises an ad-hoc network.
6. The method of claim 1, further comprising:

denying, from the master node, optical channel access to another of the plurality of distributed nodes based on the RF messaging.

7. The method of claim 6, wherein denying optical channel access comprises:
sending an access denial message via RF messaging from the master node.
8. The method of claim 1, wherein granting optical channel access to the at least one of the plurality of distributed nodes comprises:
sending an access granted message via RF messaging from the master node.
9. The method of claim 7, further comprising:
subsequent to optical channel access denial, waiting a period of time before repeating the optical channel access request via RF messaging.
10. The method of claim 9, wherein the period of time is derived from a retry time contained in the access denial message.
11. A system for implementing optical channel access in a network comprising a plurality of distributed nodes, comprising:
a first node of the plurality of distributed nodes configured to request the optical channel access with at least one other node via radio-frequency (RF) messaging;
a second node of the plurality of distributed nodes configured to grant or deny the requested optical channel access; and

a third node configured to establish the optical channel access to the first node based on whether the second node grants or denies the requested optical channel access.

12. A method of establishing an optical link between a first node and a second node in a network, wherein at least one of the first and second nodes comprises a mobile node, the method comprising:

sending a request message to establish the optical link from the first node to a third node via electrical signals over an electrically transmissive medium;

receiving a request denied message or a request granted message from the third node via electrical signals over the electrically transmissive medium;

establishing an optical link between the first node and the second node based on the receipt of the request granted message; and

transmitting data between the first node and the second node via optical signals over the optical link.

13. The method of claim 12, wherein sending a request message to establish the optical link comprises:

employing one or more time slots of a time division multiple access (TDMA) ring for sending the request message over the electrically transmissive medium.

14. The method of claim 12, wherein the optical link comprises a free-space link.

15. The method of claim 12, wherein the optical link comprises an optical fiber.
16. The method of claim 12, wherein the request denied message includes a time period that the first node is to wait before sending another request message to the third node.
17. The method of claim 12, wherein the electrical signals comprise radio-frequency (RF) signals and wherein the electrically transmissive medium comprises free-space.
18. The method of claim 12, wherein the electrically transmissive medium comprises a wired medium.
19. The method of claim 12, wherein establishing an optical link comprises:
pointing at least one steerable aperture at at least one of the first and second nodes; and
establishing the optical link via the steerable aperture.
20. The method of claim 19, wherein the steerable aperture comprises a telescope.
21. A first node in a network, comprising:
a non-optical transceiver configured to:

send a request message to a master node via electrical signals over an electrically transmissive medium to request permission to establish an optical link from the first node to a second node, wherein the second node comprises a mobile node, and

receive a request granted message or a request denied message from the master node; and

an optical subsystem configured to:

establish an optical link between the first node and the second node based on the receipt of the request granted message, and

transmit data between the first node and the second node via optical signals over the optical link.

22. The node of claim 21, wherein the non-optical transceiver is configured to:
employ one or more time slots of a time division multiple access (TDMA) ring for sending the request message to the master node over the electrically transmissive medium.
23. The node of claim 21, wherein the optical link comprises a free-space link.
24. The node of claim 21, wherein the optical link comprises an optical fiber.
25. The node of claim 21, wherein the request denied message includes a time period that the first node is to wait before sending another request message to the master node.

26. The node of claim 21, wherein the electrical signals comprise radio-frequency (RF) signals and wherein the electrically transmissive medium comprises free-space.
27. The node of claim 21, wherein the electrically transmissive medium comprises a wired medium.
28. The node of claim 21, wherein the optical subsystem is further configured to:
point at least one steerable aperture at the second node, and
establish the optical link via the steerable aperture.
29. The node of claim 28, wherein the steerable aperture comprises a telescope.
30. A method of coordinating communication between first and second nodes in a network via a master node, comprising:
arbitrating, at the master node, establishment of an optical channel between the first and second nodes by transmitting electrical signals over a non-optical channel to the master node from at least one of the first and second nodes;
granting, at the master node, the establishment of the optical channel between the first and second nodes based on the transmitted electrical signals over the non-optical channel; and
communicating via the established optical channel between the first and second nodes.

31. The method of claim 30, wherein the first node comprises a mobile node.
32. The method of claim 30, wherein establishing the optical channel comprises:
steering a first optical aperture to point towards the second node from the first node; and
establishing the optical channel via the first optical aperture.
33. The method of claim 32, wherein establishing the optical channel further comprises:
steering a second optical aperture to point towards the first node from the second node;
and
establishing the optical channel via the second optical aperture.
34. The method of claim 33, wherein the first and second optical apertures comprise
telescopes.
35. The method of claim 30, wherein the non-optical channel comprises a radio-frequency
(RF) channel.
36. The method of claim 30, wherein the non-optical channel comprises a wired medium.
37. The method of claim 36, wherein the wired medium employs at least one of Ethernet,
Internet, and ATM protocols.

38. The method of claim 30, wherein the optical channel comprises free space.
39. The method of claim 30, wherein the optical channel comprises an optical fiber.
40. A system for establishing an optical link with a mobile node in a network, comprising:
means for sending a request message to establish the optical link from a first node to a third node via electrical signals over an electrically transmissive medium;
means for receiving a request denied message or a request granted message from the third node via other electrical signals over the electrically transmissive medium;
means for establishing the optical link between the first node and the mobile node based on the receipt of the request granted message; and
means for transmitting data between the first node and the mobile node via optical signals over the optical link.